ABSTRACT OF THE DISCLOSURE

A method for reducing the topography from CMP of metal layers during the semiconductor manufacturing process is described. Small amounts of solute are introduced into the conductive metal layer before polishing, resulting in a material with electrical conductivity and electromigration properties that are very similar or superior to that of the pure metal, while having hardness that is more closely matched to that of the surrounding oxide dielectric layers. This may allow for better control of the CMP process, with less dishing and oxide erosion a result. A secondary benefit of this invention may be the elimination of superficial damage and embedded particles in the conductive layers caused by the abrasive particles in the slurries.